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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/743,560	12/23/2003	Akihiro Ozeki	008312-0307351	5051
909	7590	12/11/2006	EXAMINER	
PILLSBURY WINTHROP SHAW PITTMAN, LLP			BERHANU, SAMUEL	
P.O. BOX 10500			ART UNIT	
MCLEAN, VA 22102			PAPER NUMBER	
			2838	

DATE MAILED: 12/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/743,560

Applicant(s)

OZEKI, AKIHIRO

Examiner

Samuel Berhanu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 7-9 and 11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-9 and 11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4 and 7-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamamoto et. al. (US 2001/0034569).

Regarding Claim 1, Yamamoto et al. disclose in Figure 1, an electronic apparatus which can operate by electric power supplied from a cell unit (20) that can produce electricity by chemical reaction (Fuel cells produce energy based on their internal chemical energy), comprising: a connecting portion to which the cell unit is directly connectable (R and C wires in Figure 1); a switching unit (Each electronic device associated with switch) which can switch an operation mode between a first operation mode that makes an operation with a first power consumption amount, and a second operation mode that makes an operation with a second power consumption amount lower than the first power consumption amount supply apparatus (as shown in Figure 12, each device has different power consumption rate for different state of operations, so the power supply apparatus provides power according to their state signals or "switch position", page 10, paragraphs 0145) ; a notification unit to send a signal

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indicating that the operation mode is switched to the cell unit through the connecting portion; and a control unit configured to switch the operation mode on the basis of a signal sent back from the cell unit through the connecting portion in response to the signal of the notification unit ("R" and "C" are " a notification unit " signals, when a matching signal outputted by the fuel cell unit to the controller , the controller switched to the cell unit only, please see Example 2, on Page 5)

Regarding Claim 2, Yamamoto et. al. disclose in Figure 3, wherein the notification unit notifies of switching of the operation mode to the cell unit, upon switching from the second operation mode to the first operation mode (noted that when the fuel cell power is insufficient to provide power for the electric product the commercial power supply compensate for the insufficiency which is a "second operation mode", when the notification signal, "the request signal "R", matched with the fuel cell "notification Signal "C" ", the operation switched to the cell unit which is a "first operation mode", see example 2, page 5-6 of prior art).

Regarding Claim 3, Yamamoto et. al. disclose in Figure 3, wherein the control unit aborts switching to the first operation mode (Cell unit), when a received signal indicates that a power supply amount from the cell unit is short upon switching to the first operation mode. (Noted that when the fuel cell power is not sufficient to operate the electric product the control stop "abort" switching to the fuel cell power supply only, instead send a signal to the commercial power supply to compensate for the insufficiency, see example 2 on Page 5).

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Regarding Claim 4, Yamamoto et. al. disclose in Figure 3, a fuel cell (20) which produces electricity by chemical reaction; a rechargeable secondary battery (80, paragraph 0078); a reception unit ((power control apparatus, 300, which receives signals Ri-RN) configured to receive a message which indicates switching of the operation modes from the electronic apparatus (the electronic apparatus inform the control to switch in to appropriate power mode switch); and a response unit (a control part that sends signals T upon receiving signal R) configured to send a first message (sending a fuel cell power based on the power request signal) when a power consumption amount upon operating the electronic apparatus in the operation mode after switching is lower than an electric power that is supplied from the fuel cell (when the fuel cell is capable to provide the device power demand then it responses for the request and provide an appropriate power to the electronic apparatus, so the fuel cell is configured to send the requested power as a first message to the electronic device or product) , and to send a second message to the electronic apparatus when a power consumption amount upon operating the electronic apparatus in the operation mode after switching exceeds an electric power that is supplied from the fuel cell, but the power consumption amount is lower than an electric power that is supplied from both the fuel cell and the secondary battery (Noted that when the electric products operating or consuming less power than provided by the cell unit then purchasing power from external power supply is not taking place; however, when the power consumption of the electronic products are higher than the power supplied by the cell then the external power supply, 80, such as

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storage cell compensate the deficiency of the fuel cell and provides sufficient power to the electronic products and the additional power as a second message would be sent to the electronic device, when the system resumes its function due to the additional power supplied by the external power supply (storage cell), the power consumed by the electronic products are not greater than the total power supplied by the storage cell and the cell unit) (Paragraphs 0075-0078).

Regarding Claim 7, Yamamoto et. al. disclose in Figure 3, a power control unit (30) configured to control the fuel cell to lower the output electric power, when the output electric power of the fuel cell is larger than the power consumption amount by a value beyond a predetermined value (when the Paragraph 0021).

Regarding Claim 8, Yamamoto et. al. disclose in Figure 3, a power control unit (300) configured to control the fuel cell to raise the output electric power (when the power control apparatus send the second signal to the cell unit, the cell unit increase or decrease the power generation based on the input signal), when the power consumption amount is larger than the output electric power of the fuel cell, wherein the response unit sends a signal indicating that the output electric power of the fuel cell has been changed to the electronic apparatus, when the output electric power of the fuel cell has reached the power consumption amount under the control of the power control unit (see example 2, on Page 5).

Claim Rejections - 35 USC § 103

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3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et. al. (US 2001/0034569) in view of Saito et. al. (US 6,301,674).

Regarding Claim 9, Yamamoto et. al. do not disclose explicitly, wherein the response unit sends a third message that inhibits switching of the operation mode, when the power consumption amount upon operating the electronic apparatus in the operation mode after switching exceeds an electric power that is supplied from both the fuel cell and the secondary battery. However, Saito et. al. disclose in Figure 3, wherein the response unit (**The Breaker Unit**) sends a third message that inhibits switching of the operation mode, when the power consumption amount upon operating the electronic apparatus in the operation mode after switching exceeds an electric power that is supplied from both the fuel cell and the secondary battery (see Column 5, lines 59-67, Column 6, lines 1-2, Column 9, lines 48-60, Column 13, lines 23-59, Column 15, lines 20-27). It would have been obvious to a person having ordinary skill in the art at the time of the invention to add a power control means (breaker) as taught by Saito et. al. in Yamamoto et. al. apparatus in order to stop the power supply when the power consumption exceeds the limit of the power supply in order to prevent a fault or an accident from occurring.

5. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et. al. (US 2001/0034569) in view of Bonnefoy (US 5,714,874).

Regarding Claim 11, Yamamoto et. al. do not disclose explicitly, a power control unit configured to charge the secondary battery by electric power as a difference between the output electric power of the fuel cell and the power consumption amount, when the output electric power of the fuel cell is larger than the power consumption amount by a value beyond a predetermined value.

However, Bonnefoy discloses in Figure 1, a power control unit (5a) configured to charge the secondary battery by electric power as a difference between the output electric power of the fuel cell and the power consumption amount, when the output electric power of the fuel cell is larger than the power consumption amount by a value beyond a predetermined value (Column 2, lines 20-25 and line 62, Column 3, line 51, Column 4, lines 24-34). It would have been obvious to a person having ordinary skill in the art at the time of the invention to add a fuel cell charging means as taught by Yamamoto in order to maintain the secondary battery voltage as a desired voltage so that the battery can provide sufficient power for the device for a long period of time.

Response to Arguments

Applicant's arguments filed 10/13/2006 have been fully considered but they are not persuasive. Applicant argues that there is no teaching or suggestion in Yamamoto, "a connecting portion, and the connecting portion configures to send a message". This is incorrect.

Yamamoto et. al. disclose a signal or connection wire for the communication signals "R" and "C" in Figure 1, see also paragraph 2 above. Applicant also argues that there is no teaching or suggestion in Yamamoto "a first message to the electronic apparatus when a power consumption amount upon operating the electronic apparatus in the operation mode after switching is lower than an electric power that is supplied from the fuel cell," and "a second message to the electronic apparatus when a power consumption amount upon operating the electronic apparatus in the operation mode after switching exceeds an electric power that is supplied from the fuel cell, but the power consumption amount is lower than an electric power that is supplied from both the fuel cell and the secondary battery." This is incorrect.

Yamamoto et. al. disclose a first message (sending a fuel cell power based on the power request signal) when a power consumption amount upon operating the electronic apparatus in the operation mode after switching is lower than an electric power that is supplied from the fuel cell (when the fuel cell is capable to provide the device power demand then it responses for the request and provide an appropriate power to the electronic apparatus; so the fuel cell is configured to send the requested power as a first message to the electronic device or product) , and to send a second message to the electronic apparatus when a power consumption amount upon operating the electronic apparatus in the operation mode after switching exceeds an electric power that is supplied from the fuel cell, but the power consumption amount is lower than an electric power that is supplied from both the fuel cell and the secondary battery (Noted

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that when the electric products operating or consuming less power than provided by the cell unit then purchasing power from external power supply is not taking place; however, when the power consumption of the electronic products are higher than the power supplied by the cell then the external power supply, 80, such as storage cell compensate the deficiency of the fuel cell and provides sufficient power to the electronic products and the additional power as a second message would be sent to the electronic device, when the system resumes its function due to the additional power supplied by the external power supply (storage cell), the power consumed by the electronic products are not greater than the total power supplied by the storage cell and the cell unit) (Paragraphs 0075-0078).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel Berhanu whose telephone number is 571-272-8430. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Karl Easthom can be reached on 571-272-1989. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SB



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